Federal Fleet Success Stories

Fired Up With B20

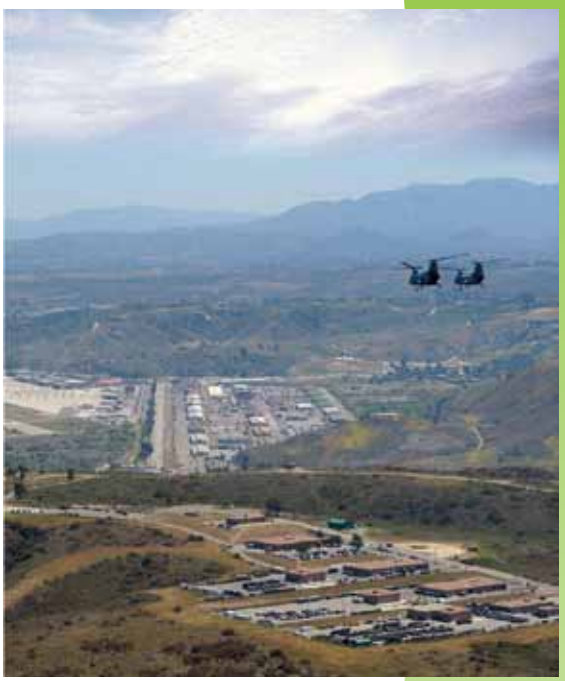
U.S. Marine Corps is Leading the Way with Widespread B20 Use

The Marines successfully implemented a program to increase its use of alternative fuel use long before it was required by Executive Order 13423. How did they do it?

Champions of B20

In 2001, the Marine Corps' leadership made a decision: they were going to reduce fossil fuel consumption in vehicles operating on Marine bases across the country. And they were going to do it by using a product made in America, from B20, a mixture of 20 percent biodiesel made from domestically-produced virgin soybeans and 80 percent regular diesel. Although not defined as an alternative fuel, the 20 percent pure biodiesel component of B20 counts towards an agency's alternative fuel use (and also displaces 20 percent of the vehicle's diesel use). B20 may be used in almost all diesel vehicles.

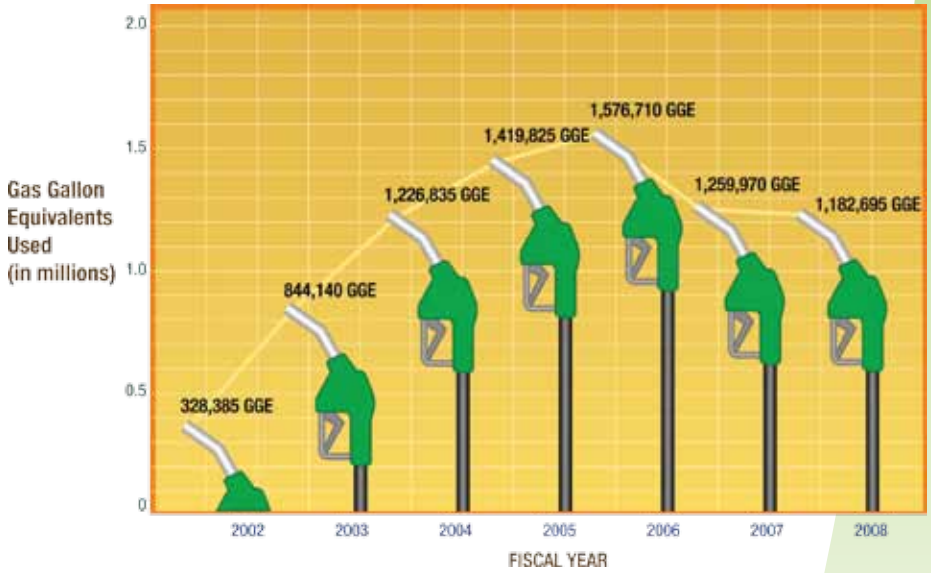
The Marine Corps fleet is about a quarter of the size as the U.S. Army's, but it is not insubstantial by any means. The Marines operate about 1,700 diesel-fueled vehicles across the country (out of roughly 12,000



Camp Pendleton is the nation's largest buyer of B20 (as of 2007).

- Across the nation, B20 has been the major factor in Marine Corps petroleum fuel reduction.
- Even before FY 2005, the Marine Corps annual B20 consumption was more than one million GGEs.
- 90 percent of the Marine Corps bases now use B20.
- The use of B20 has been relatively problem free. The Marine Corps uses B20 made with biodiesel produced from virgin soy.
- The National Biodiesel Board awarded Barry (Tom) Smallwood, Deputy Director Commercial Fleet for the U.S. Marine Corps, the 2008 Influencer Award.

U.S. Marine Corps B20 Fuel Use



total domestic vehicles). Making the conversion to B20 required some planning and education.

The Marine Corps realized that one key to success in converting to B20 would be its seamless integration into their existing military infrastructure. B20 can be transported and stored anywhere that petroleum diesel can, and it can be dispensed from the same refueling equipment.

A further strategic consideration was that, with Marine Corps bases and facilities located in every region of the country, it was important that B20 could be used in any location, in any climate, and at any altitude without any performance problems.

From Camp Lejeune, North Carolina to Camp Pendleton, California, B20 usage took off. By FY 2006, about 90 percent of Marine Corps bases were using B20, for a total of more than 1.5 million gas gallon equivalents (GGEs). By all accounts, these surprising figures showed that the Marines had successfully converted its fleet to B20.

Dispelling the B20 Myths

The Marines began their nationwide fleet conversion in 2002 by implementing an educational campaign about B20, dispelling many of the commonly held misconceptions about the fuel.

First, the Marine Corps began using B20 fuel without the need for any type of engine conversion. In fact, many drivers were not initially aware that they were driving a vehicle using B20. The Marine Corps quickly demonstrated that B20 can be used in petroleum diesel vehicles without interruption and without modifications to the vehicle fuel systems or engines.

Second, the Marine Corps uniformly converted fuel storage. They enlisted the help of the Defense Energy Support Center (DESC) to clean out the existing diesel tanks and replace the fuel with virgin soy-based B20. Now the Marines run exclusively on virgin soy-based biodiesel in their B20 to eliminate any chance for error by specifying the wrong fuel type.

Third, the Marine Corps assured their personnel that they would see no noticeable loss in performance. Use of B20 results in only a 1-2 percent loss in power, torque, and fuel efficiency. To put things into perspective, that's less than a 2 mph difference on the highway at 55 mph. (B20 contains about 1.8 percent less energy per gallon than petroleum diesel.) Marine Corps fleet drivers have reported that using B20 and petroleum diesel is practically indistinguishable.

Leading by Example

One of the foundations of the Marine Corps success with B20 use was service policy mandating the use of B20 in diesel vehicles. A January 2005 memorandum from the Deputy Commandant mandated that all non-tactical diesel vehicles "operate on biodiesel fuel (B20) no later than 1 June 2005 where B20 can be supplied by DESC, adequate fuel tanks are available, and the use of biodiesel fuel is allowable."

"Our leadership really bought into this program. I think that's the real key to our success," says Barry (Tom) Smallwood, fleet program manager at Marine Corps headquarters. "If you don't have buy-in from your leadership, you won't have a successful program." In 2001, Smallwood attended a meeting in Beltsville, MD where he learned that the U. S. Department of Agriculture had been successfully using B20 for two years. He then worked to develop a strategy for widespread use within the Marine Corps. Smallwood gives credit to the Agriculture Department for inspiration in helping the Marine Corps reach its petroleum reduction goals.

According to Smallwood, the fleet managers at Marine Corps bases are also genuinely concerned about the environment and energy security. Fleet managers make it clear that B20 helps the economy and burns more completely than regular diesel fuel, resulting in reduced emissions.

The Road to Success

The Marines are not resting on their success with B20. In order to satisfy the various Federal fleet mandates and executive orders, they are currently expanding their infrastructure for E85 and acquiring more of the alternative fuel vehicles that use it.

"Making the numbers, or compliance with the mandates, is only half of it," says Smallwood. "Decreasing our dependence on foreign oil, increasing our energy security, and helping the environment are the right things to do to keep our country strong."

U.S. DEPARTMENT OF
ENERGY

Energy Efficiency & Renewable Energy

BROADENING USE OF B20

By FY 2006, 90 percent of the U.S. Marine Corps bases and stations throughout the country were using B20. This is the equivalent of more than 1.5 million GGEs of B20 used.

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